



# The NORTH CAROLINA Asthma EPIDEMIOLOGY Update

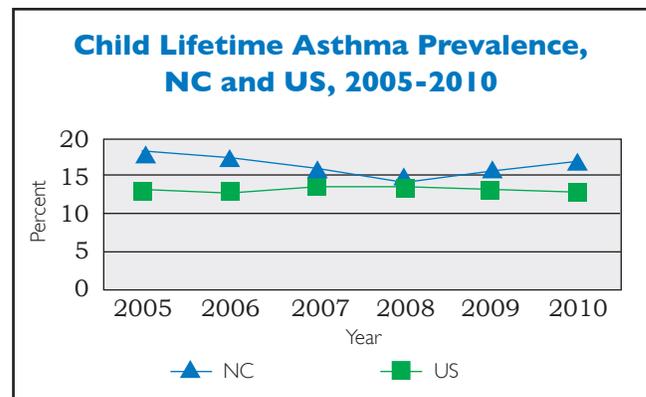
Summer 2012

## Child Asthma in North Carolina

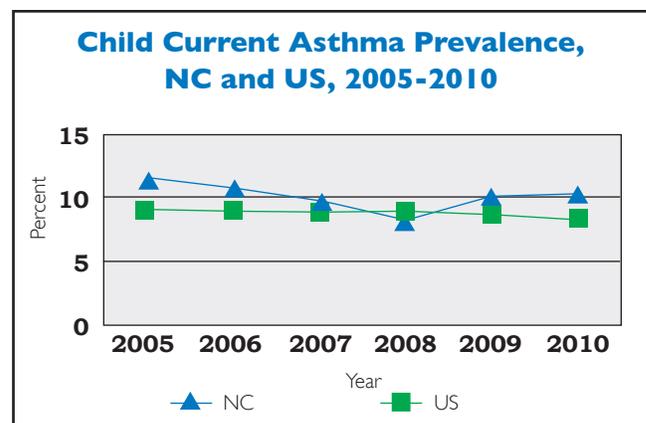
This issue of **The Asthma Epidemiology Update** presents prevalence and hospitalization data for child lifetime (have ever had) and child current (still have) asthma in North Carolina. It also provides a look at selected asthma outcomes and management behaviors among children under the age of 18 years with asthma and school-based asthma data.

### Prevalence

- Lifetime asthma prevalence in North Carolina decreased from 2005 (17.8%) to 2008 (14.2%), but increased from 2008 to 2010 (16.8%).<sup>1</sup>
- Lifetime asthma prevalence in the United States remained stable from 2005 (12.9%) to 2010 (12.6%).<sup>2</sup>
- Current asthma prevalence in North Carolina decreased from 2005 (11.5%) to 2008 (8.2%), but increased from 2008 to 2010 (10.3%).<sup>1</sup>
- Current asthma prevalence in the United States remained stable from 2005 (9.0%) to 2010 (8.4%).<sup>2</sup>



Sources: NC: 2005-2010 Child Health Assessment and Monitoring Program, N.C. State Center for Health Statistics; US: 2005-2010 Behavioral Risk Factor Survey System, National Center for Health Statistics (Data from 38 states plus the District of Columbia)

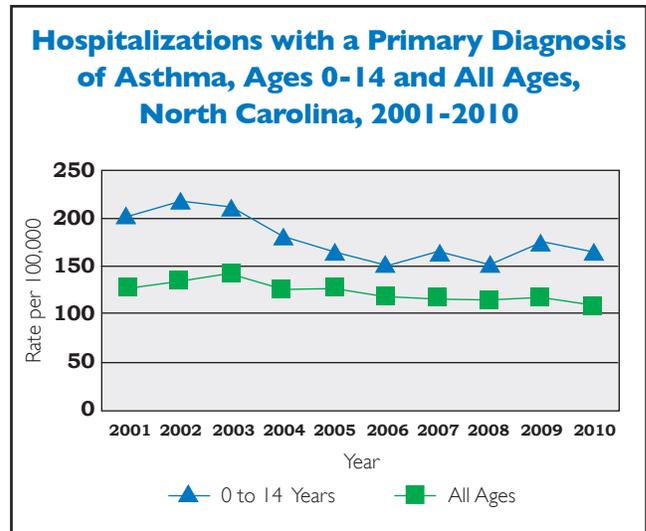


Sources: NC: 2005-2010 Child Health Assessment and Monitoring Program, N.C. State Center for Health Statistics; US: 2005-2010 Behavioral Risk Factor Survey System, National Center for Health Statistics (Data from 38 states plus the District of Columbia)

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## Hospitalizations

- From 2001-2010, hospitalizations due to asthma among children under 15 years of age decreased by 18.0 percent (202.5 per 100,000 to 166.0 per 100,000).<sup>3</sup>
- In 2010, asthma hospitalization rates were higher for children less than 18 years old (144.4 per 100,000) than for adults (98.9 per 100,000).<sup>3</sup>
- Among four children’s age groups, those under the age of 5 years had an asthma hospitalization rate (264.5 per 100,000) that was 1.7 times that of the next highest age group (5-10 years: 154.9 per 100,000).<sup>3</sup>



Source: N.C. Hospital Discharge Data (as of May 25, 2012), N.C. State Center for Health Statistics

### Hospitalizations with a Primary Diagnosis of Asthma, Number and Rate, by Age Group, North Carolina, 2010

	Age Group (Years)					
	<5*	5-10	11-13	14-17	18+	Total
<b>Number of Hospitalizations</b>	1,672	1,187	260	175	7,177	10,471
<b>Age-specific Crude Rate (Per 100,000)</b>	264.5	154.9	69.0	34.5	98.9	109.8

\*Newborns not included; ages 1-4 years

Source: N.C. Hospital Discharge Data (as of May 25, 2012), N.C. State Center for Health Statistics

## Prevalence, by Gender, Race and Age

- Boys (17.9%) have higher lifetime and current asthma prevalence rates than girls (15.4%).<sup>1</sup>
- Non-Hispanic black children (22.1%, 17.4%) have higher lifetime and current asthma prevalence than their non-Hispanic white counterparts (14.6%, 7.4%).<sup>1</sup>
- Children aged 11-13 years have the highest lifetime (25.3%) and current (19.5%) asthma prevalence.<sup>1</sup>

### Child Lifetime Asthma Prevalence, by Gender, Race, and Age, North Carolina, 2010

	Percent	95% C.I.
<b>Total</b>	16.8	14.8 – 18.9
<b>Gender</b>		
Boys	17.9	15.0 – 21.2
Girls	15.4	12.8 – 18.5
<b>Race</b>		
Non-Hispanic White	14.6	12.4 – 17.1
Non-Hispanic Black	22.1	17.3 – 27.8
Other Minorities	18.4	12.6 – 26.0
<b>Age (Years)</b>		
Under 5	8.3	5.5 – 12.3
5 through 10	16.2	12.8 – 20.2
11 through 13	25.3	19.9 – 31.5
14 through 17	20.1	16.3 – 24.4

Source: 2010 NC CHAMP, N.C. State Center for Health Statistics

### Child Current Asthma Prevalence, by Gender, Race, and Age, North Carolina, 2010

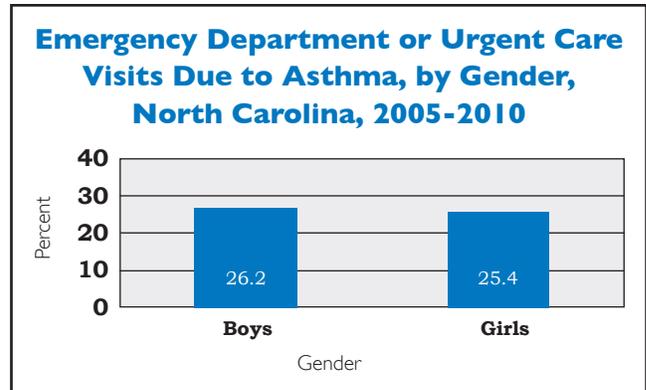
	Percent	95% C.I.
<b>Total</b>	10.3	8.7 – 12.1
<b>Gender</b>		
Boys	11.4	9.0 – 14.3
Girls	9.2	7.2 – 11.6
<b>Race</b>		
Non-Hispanic White	7.4	5.9 – 9.3
Non-Hispanic Black	17.4	13.0 – 22.8
Other Minorities	12.1	8.6 – 12.3
<b>Age (Years)</b>		
Under 5	5.4	3.3 – 8.7
5 through 10	10.5	7.7 – 14.0
11 through 13	19.5	14.6 – 25.6
14 through 17	8.2	5.9 – 11.3

Source: 2010 NC CHAMP, N.C. State Center for Health Statistics

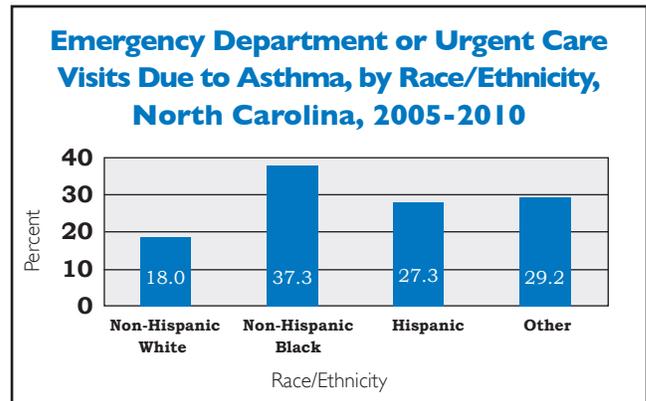
## Asthma Outcomes and Management Behaviors

2005-2010 North Carolina Childhood Health Assessment (NC CHAMP) data provide additional information about child asthma outcomes and management behaviors. Findings from the six-year period include:

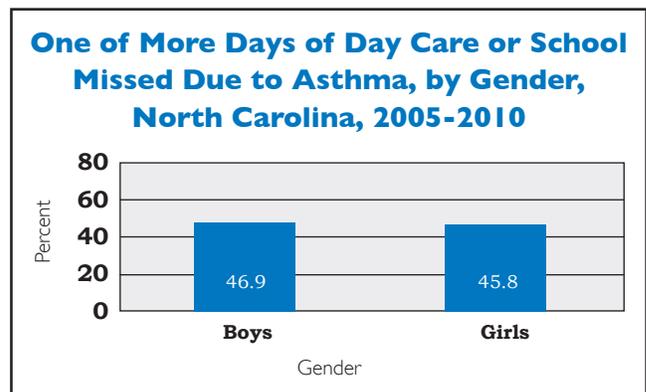
- The percentage of children who had emergency department or urgent care visits due to asthma was similar among boys (26.2%) and girls (25.4%).<sup>1</sup>
- More non-Hispanic black children (37.3%) had emergency department or urgent care visits due to asthma when compared to non-Hispanic white children (18.0%).<sup>1</sup>
- The percentage of children who missed one or more days of day care or school was similar among boys (46.9%) and girls (45.8%).<sup>1</sup>



Source: 2005-2010 N.C. CHAMP, N.C. State Center for Health Statistics



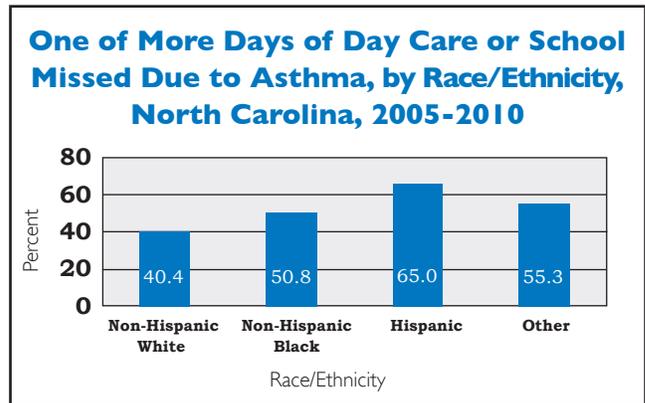
Source: 2005-2010 N.C. CHAMP, N.C. State Center for Health Statistics



Source: 2005-2010 N.C. CHAMP, N.C. State Center for Health Statistics

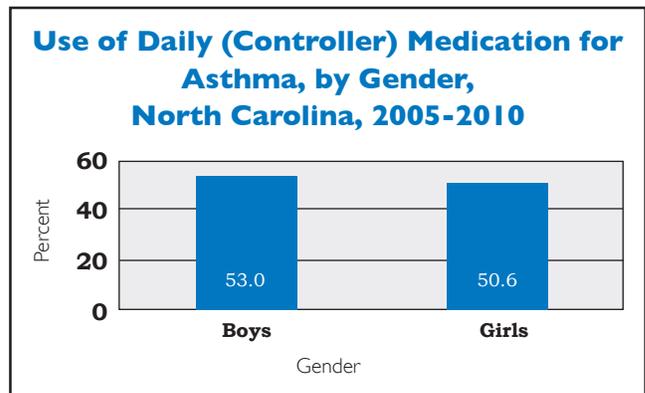
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- More Hispanic children (65.0%) missed one or more days of day care or school when compared to non-Hispanic white children (40.4%).<sup>1</sup>



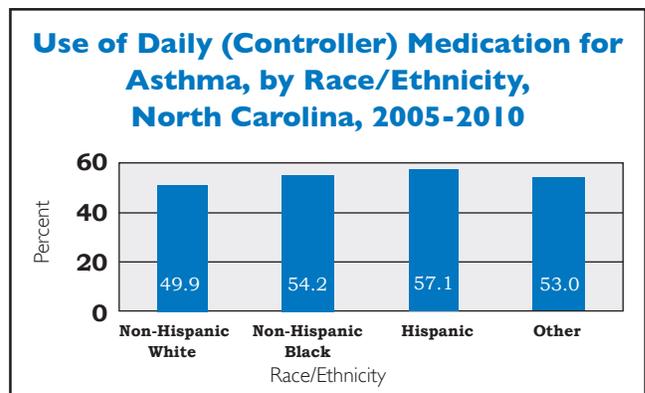
Source: 2005-2010 N.C. CHAMP, N.C. State Center for Health Statistics

- The percentage of children who used a daily (controller) medication for asthma was similar among boys (53.0%) and girls (50.6%).<sup>1</sup>



Source: 2005-2010 N.C. CHAMP, N.C. State Center for Health Statistics

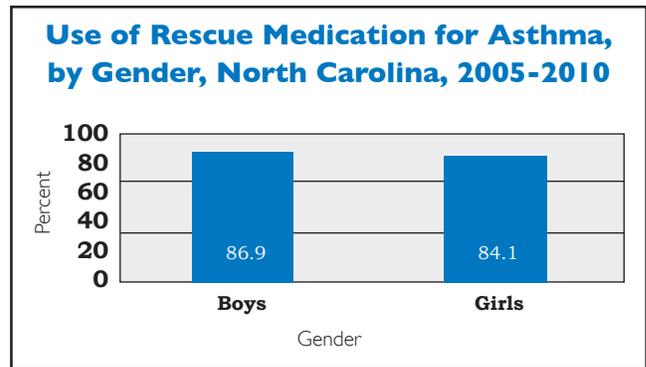
- Use of a daily (controller) medication for asthma was similar across all racial/ethnic groups.<sup>1</sup>



Source: 2005-2010 N.C. CHAMP, N.C. State Center for Health Statistics

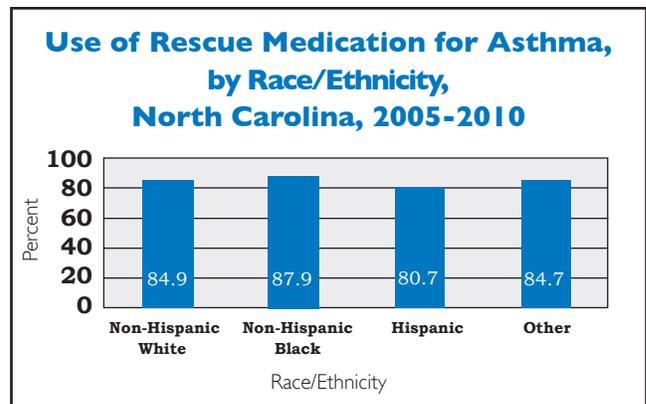
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- The percentage of children who used a rescue medication for asthma was similar among boys (86.9%) and girls (84.1%).<sup>1</sup>



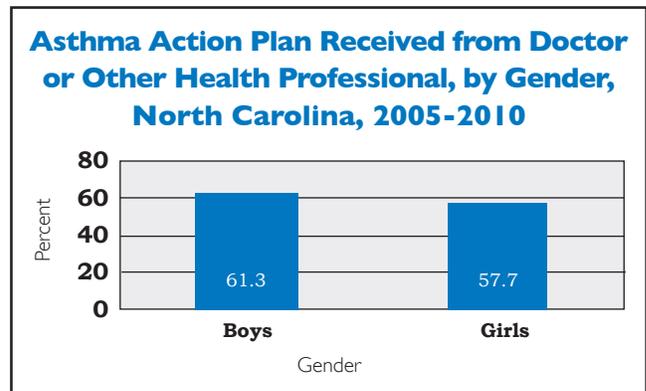
Source: 2005-2010 N.C. CHAMP, N.C. State Center for Health Statistics

- Use of a rescue medication for asthma was similar across all racial/ethnic groups.<sup>1</sup>



Source: 2005-2010 NC CHAMP, N.C. State Center for Health Statistics

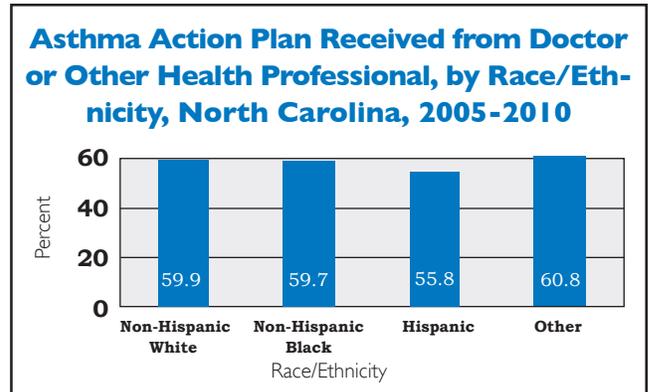
- The percentage of children having an asthma action plan was similar for boys (61.3%) and girls (57.7%).<sup>1</sup>



Source: 2005-2010 N.C. CHAMP, N.C. State Center for Health Statistics

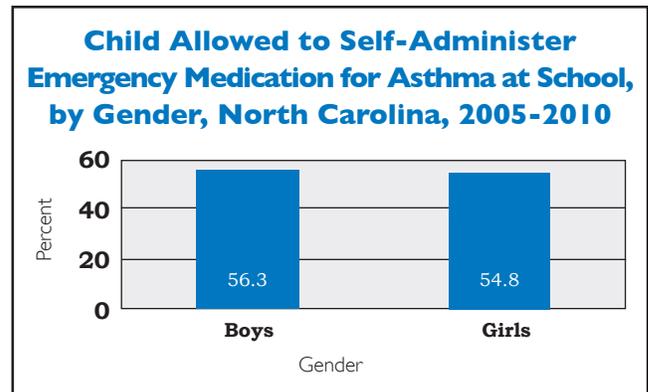
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- The percentage of children having an asthma action plan was similar across all racial/ethnic groups.<sup>1</sup>



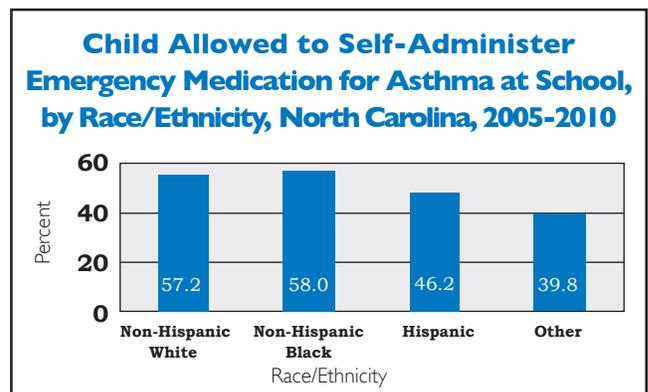
Source: 2005-2010 N.C. CHAMP, N.C. State Center for Health Statistics

- The percentage of children who are allowed to self-administer emergency medication for asthma at school was similar for boys (56.3%) and girls (54.8%).<sup>1</sup>



Source: 2005-2010 NC CHAMP, N.C. State Center for Health Statistics

- The percentage of children who are allowed to self-administer emergency medication for asthma at school was similar for the non-Hispanic white (57.2%), non-Hispanic black (58.0%), and Hispanic (46.2%) groups.<sup>1</sup>



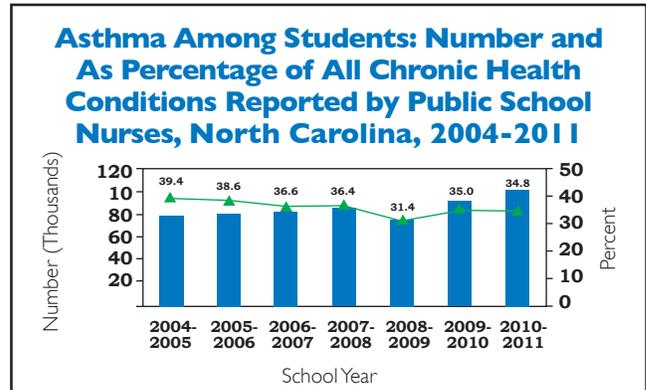
Source: 2005-2010 N.C. CHAMP, N.C. State Center for Health Statistics

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## Asthma in Schools

According to the Centers for Disease Control and Prevention (CDC), asthma is a leading cause of school absenteeism.<sup>4</sup> The number of students with asthma in North Carolina public elementary, middle and high schools has been increasing since the 2004-2005 school year (77,276) to the 2010-2011 school year (101,599).<sup>5</sup>

- From the 2004-2005 school year to the 2010-2011 school year, asthma has accounted for 31-39 percent of all chronic health conditions reported by North Carolina public school nurses.<sup>5</sup>



Source: 2004-2011 North Carolina Annual School Health Services Reports, N.C. Healthy Schools

## Future Topics

As always, the North Carolina Asthma Program welcomes your comments and suggestions on this and future issues of the Asthma Epidemiology Update. Please contact us at 919-707-5213.

## References

1. 2005-2010 Child Health Assessment and Monitoring Program, NC State Center for Health Statistics (<http://www.schs.state.nc.us/schs/champ/>).
2. 2005-2010 Behavioral Risk Factor Surveillance System, National Center for Health Statistics, CDC (<http://www.cdc.gov/asthma/brfss/default.htm>).
3. 2010 NC Hospital Discharge Data (as of May 18, 2012), NC State Center for Health Statistics.
4. 2005-2011 North Carolina Annual School Health Services Report, NC Division of Public Health.
5. Asthma and Schools, Adolescent and School Health, CDC (<http://www.cdc.gov/HealthyYouth/asthma/>).



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